

transformed host cells taken from a fresh transformant colony, and not overnight cultures; allowing the primary cell culture to incubate for a period of time; inducing FlaA protein expression from said host cells in culture; and isolating recombinant FlaA protein].

15. (Amended) [A recombinant FlaA protein] The diagnostic reagent of claim 14, said protein having the partial amino acid sequence [of amino acids 1-319 of] as shown in SEQ ID NO.:2.

16. (Amended) [A] The diagnostic reagent as in claim 15 wherein the recombinant FlaA or P37 protein is [expressed as] a fusion protein.

17. (Amended) [A] The diagnostic reagent as in claim 16 wherein the FlaA or P37 protein comprises [expressed with] a fusion partner that is approximately a 38 kDa T7 gene 10 product.

--19. The diagnostic reagent of claim 14, said protein having the amino acid sequence of amino acids 1-319 of SEQ ID NO.:2. ✓

20. A diagnostic reagent for early detection of Lyme disease produced using a method for producing recombinant FlaA or P37 protein comprising: providing freshly transformed host cells; constructing a DNA expression vector containing an expressible FlaA encoding DNA sequence; transforming a suitable host cell with said expression vector; plating out transformed host cells; preparing large scale primary cell cultures from transformed host cells taken from a fresh transformant colony; and inducing FlaA or P37 protein expression from said host cells in culture to obtain a recombinant FlaA or P37 protein.

21. A diagnostic reagent as in claim 20 comprising the entire amino acid sequence encoded by the nucleic acid sequence as shown in SEQ ID NO: 1.

22. A diagnostic reagent as in claim 20 comprising the partial amino acid sequence as shown in SEQ ID NO: 2.

23. A diagnostic reagent as in claim 20 comprising the partial amino acid sequence encoded by the nucleic acid sequence as shown in SEQ ID NO: 3.

24. A diagnostic reagent as in claim 20 wherein the recombinant FlaA or P37 protein is a fusion protein.

25. A diagnostic reagent as in claim 20 wherein the recombinant FlaA or P37 protein comprises a fusion partner that is approximately a 38 kDa T7 gene 10 product.

an E. Coli cell.

27. A diagnostic reagent as in ~~claim~~ 14 comprising an amino acid sequence or fragment thereof selected from the group consisting of SEQ ID NO: 1, SEQ ID NO: 2 and SEQ ID NO: 3.

28. A host cell containing the nucleic acid sequence of claim 15 or a complement thereof.

29. An expression vector comprising the nucleic acid sequence of claim 15 or a complement thereof.

30. A diagnostic reagent for ~~detection~~ of Lyme disease comprising an amino acid sequence as in claim 15 which is substantially antigenic to B. burgdorferi antibodies.--